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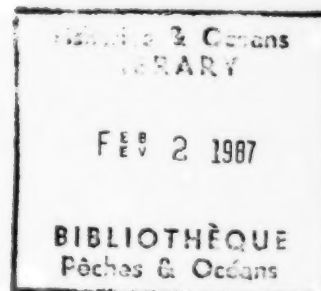
On the occurrence of Isochaetides newaensis (Mich.)
(Oligochaeta) in Slovakia

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Prace z oboru botaniky a zoologie [Paper on the Topic of Botany and
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ON THE OCCURRENCE OF ISOCHAETIDES NEWAENSIS (MICH.) (OLIGOCHAETA)
IN SLOVAKIA

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Abstract

The description Isochaetides newaensis (Mich.), based on individuals collected from the eastern portions of the Danube in the vicinity of Sturovo in Czechoslovakia, is provided. The worms collected in the US, which have the upper serration approximately as long as the lower one, and which have the bipartite vas deferens of Tubifex tubifex do not belong to Isochaetides newaensis as was erroneously believed by Brinkhurst and Cook (1966). Refer to Hrabec 1962 :310, Figs. 36-40 or to Cekanovskaja (1962) :251, Fig. 151 for the chaetae of Isochaetides newaensis. [71]*

* Numbers in the right-hand margin indicate the corresponding page numbers in the original text - Tr.

In reviewing the journals and microscope slides, I observed that in September of 1949 I collected numerous sexually mature individuals of the Isochaetides newaensis species, which had not been found in Czechoslovakia until that time, in 9 locations along the Danube River east of Sturov, and in one pool in the banks of the Danube. At that time I postponed the publication of the paper dealing with the findings of the September excursion to Sturov, and I did not publish the findings concerning this Oligochaeta, which differs in many respects from other members of the Tubificidae family found in Czechoslovakia, nor did I describe this species in my subsequent paper concerning Oligochaeta published in 1981. I am therefore publishing the findings at this time.

Isochaetides newaensis (Mich.) 1902

- 1902 Limnodrilus newaensis Michaelsen, Mitt. nathist. Mus., Hamburg, 19:3-6.
- 1962 Limnodrilus newaensis Cekanovskaja. Opr. fauny SSSR: 78:251. [72]
- 1966 Isochaetides newaensis Hrabe. Publ. Fac. Sci. Univ. Brno, 470:73, 75.

The body is at most 55 mm long, up to 1.6 mm wide, and consists of up to 190 segments. The frontal lobe is short and conical.

All chaetae are serrated, always with the upper serration shorter than the lower serration, and only in old chaetae are both serrations worn down (Hrabe 1962 :310, Fig. 36-41). Segments II to V contain 4 to 7 chaetae per tuft, subsequent segments contain 3 to 4 chaetae per tuft, and segments behind the clitellum always contain only 2 chaetae per tuft.

One pair of spermathecae has openings directly in the median line of Segment X, and one pair of vas deferens has openings in Segment XI in place of the ventral tufts.

Dissepiments 3/4 to 9/10 are prominent by their thickness, they are up to 120 μm thick, and they have a peculiar elongated, funnel-like shape, because they are attached to the body wall at the anterior of the segment and to the alimentary tract in the anterior third of the subsequent segment; the dissepiment of one segment therefore protrudes into the dissepiment of the following segment. Starting with dissepiment 10/11, the dissepiments are thin.

One pair of testes is present in Segment X, and one pair of ovaries is present in Segment XI. The male duct consists of a funnel, vas deferens, and atrium, in which an ampulla with an outlet duct, terminated by a penis retracted in a penile sheath, is found.

One pair of unusually large male funnels, profusely covered by filaments, is present in Segment X on Dissepiment 10/11. Vas deferens [73] behind the funnel are 25 μm in diameter, and their diameter gradually increases in their lower section to 52 μm and then decreases to a diameter of 40 μm prior to entering the atrial ampulla. In two individuals, which were fixated using Bouin's Solution, the following diameters were observed: 39, 103, 86 and 52, 90 and 83 μm . Vas deferens, which have numerous filaments along their entire length, extend as far as Segment XIV in some individuals. Their internal wall has fine transverse ridges. Each vas deferens leads to the apical end of a pear-shaped atrium. Ductuli of glandular cells of a large lobe-like prostate are surrounded by a common sphincter 120 μm long along the side of the atrium in front of the entrance to the atrium.

Penises, [dimension missing in original text - Tr] μm long, are bulging in the middle, and are covered by a cuticular ring which is open

or has a proximal edge which bends downward. The ring is 100 μm long and has a proximal diameter of 130 μm and a distal diameter of 100 μm .

Spermathecae have a large egg-shaped ampulla with a short outlet. The sperm are boat-shaped and they are wide in the middle.

The specimens were found in the following localities (the names are the official names used at that time):

1) Danube River, near the eastern end of the island near the Kamenice nad Hronom railway station; 2) Danube River, downstream of this railway station; 3) Danube River, 150 m downstream of this railway station; 4) Danube River, near the Kovacov railway station; 5) Danube River, near the north-east end of the island east of Ebed Pusta; 6) Danube River, south of Ebed Pusta; 7) Danube River, downstream of Kovacov near the 1713 km marker; 8) Spring on the bank of the Danube River south of Ebed Pusta; 9) Pool on the banks of the Danube River near the railway bridge above the mouth of the Hron River; 18-21 September, 1947, Hrabe leg. Collection, Hrabe Hr. 1191-4, 6, 7, 9, 12, 15, 16, 19.

Isochaetides newaensis differs from Isochaetides michaelsoni Last. [74] (exend. Hrabe 1941), which I collected in 1934 in the branches of the Danube River near Cilistov (Hrabe 1941) and near Kovacov (unpublished) by several prominent characteristics. The body of the newaensis species is up to 55 mm long, 1.6 mm in diameter, and consists of up to 190 segments. Ventral chaetae are completely missing from Segment XI of sexually mature individuals. Modified sexual chaetae do not occur even in other segments. The tufts of chaetae almost always contain only 2 serrated chaetae per tuft in segments past the clitellum. The dissepiments of the anterior are unusually thick and have a thimble-like shape because the central part of the dissepiment of the preceding segment extends into the subsequent segment. Spermathecae always have openings directly in the median line of Segment X. The penises have a cuticular ring.

Isochaetides michaelsoni is always smaller, it is at most 33 mm long and at most 0.6 mm in diameter, and consists of at most 118 segments. Segments IX, X, and XI have one modified sexual chaeta with an upper serration longer than the lower one instead of the usual ventral chaetae. Starting in Segment XIII, the ventral tufts of chaetae have 3 to 4 serrated chaetae with the upper serration shorter than the lower one. Slightly bulging dissepiments 5/6 to 8/9, which are at most 30 μ m thick, are attached by their central part to the alimentary canal at the anterior of the corresponding segment (Hrabe 1941, Fig. 40). The spermathecae have openings in a lateral direction in front of the sexual chaetae of Segment X. The penises are covered by cuticulum only on the anterior side. Both species have been found in numerous locations in the USSR (Cekanovskaja 1962:250, 251).

The tubifex worms, found in the US, which have the upper serration [75] as long as the lower one and which have a bipartite vas deferens as in Tubifex tubifex is not the same as Isochaetides newaensis, as is erroneously reported by Brinkhurst and Cook (1965).

